

# Notice of Allowability

Application No.

10/568,289

Examiner

Charlie Peng

Applicant(s)

FUJITA ET AL.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 11 September 2007.
2. ☒ The allowed claim(s) is/are 2,4,5,8-11,18-21,24,25 and 28-34.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20070917.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## DETAILED ACTION

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

#### *1. Amendments to Abstract.*

Please amend the abstract to the paragraph as follows:

Even if a fiber fuse phenomenon occurs to start fire spreading, the fire spreading is shut off. A graded index fiber (GIF) 3 is inserted between transmission-use single mode fibers (SMF) 2a, 2b on a fiber optics transmission line 1. The GIF 3 is so designed that its mode field diameter (MFD) gradually increases from a light entry side. The MFD exhibits a maximum value at a location 1/4 of a pitch from the end of the GIF 3. A GIF 3a is disposed on the light entry side. A GIF 3b having an MFD gradually decreasing is disposed on the opposite side of the GIF 3a. The GIF 3b is disposed on the light exit side. The lengths of the GIF 3a and GIF 3b are 1/4 of a pitch. The length of the GIF 3 formed by connecting the both is 1/2 of a pitch. According to the present invention, an expanded MFD is inserted in the middle of the fiber optics transmission line, it is possible to shut off fire spreading caused due to fiber fuse phenomenon.

## *2. Amendments to claims.*

There are two claims numbered as 31, a first one designated as (Currently Amended) and a second one designated as (New). Please re-number the second of the two claims, which was designated as (New), as Claim 34.

In claim 2, line 1, replace [claim 31] with --claim 34--;

In claim 4, line 1, replace [claim 31] with --claim 34--;

In claim 8, line 1, replace [claim 31] with --claim 34--;

In claim 10, line 1, replace [claim 31] with --claim 34--.

### ***Allowable Subject Matter***

Claims 32-34 are allowed. The following is an examiner's statement of reasons for allowance: Previously indicated allowable subject matters are incorporated into independent claims 32-34. Grinderslev and Sato teach the optical transmission line except for a second pair of single mode optical fibers inserted between GRIN fibers, wherein the second pair of single mode optical fibers have mode field diameter smaller than the expanded mode field of the GRIN fibers. This limitation has the advantage of shutting off fire spreading toward a light source of the transmission line, i.e., preventing fiber fuse phenomenon. Relevant prior art has not indicated using such a method to solve such a problem, and in fact often use a fiber of same mode field diameter. It is the examiner's opinion that the prior art of record, taken alone or in combination, fails to

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disclose or render obvious such a single mode optical fiber, in combination with the rest of the limitations of the base claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 9 am - 6 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*/ Charlie Peng /*  
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